Patent Claims

1. A method for monitoring a rotation rate sensor having a vibration gyro, which represents a bandpass filter and is part of at least one control loop which comprises digital and analog components and excites the vibration gyro by supplying an excitation signal at its natural frequency, in which case an output signal can be tapped off from the vibration gyro, from which the excitation signal and a rotation rate signal are derived by filtering and amplification, characterized in that analog signals are measured and characteristic values within the digital components are read, and are in each case compared with limit values, by means of redundant analog components and at least one analog/digital converter.

2. The method as claimed in claim 1, characterized in that the excitation signal is also modulated with a modulation signal whose frequency produces sidebands which are located within the pass band of the bandpass filter, but are outside the frequency range of the rotation rate signal, in that the amplitude of the modulation signal in the output signal is measured, and in that a fault message is emitted if the amplitude is less than a predetermined threshold value.

3. The method as claimed in claim 2, characterized in that the output signal is demodulated, after amplification and analog/digital conversion, into an in-phase and a quadrature component, in that the in-phase component and the quadrature component are modulated again after filtering and are combined to form the excitation signal,

and in that the modulation signal is added to the demodulated components.

4. The method as claimed in claim 3, characterized in that measurement signals are taken from the demodulated components before the addition of the modulation signal, and are demodulated synchronously.

5. The method as claimed in claim 4, characterized in that measurement signals are tapped off before and after filtering of the demodulated output signals.

6. The method as claimed in one of claims 4 or 5, characterized in that the synchronously demodulated measurement signals are integrated over a predetermined time, and in that the value of the integral is compared with the predetermined threshold value.

7. The method as claimed in one of claims 4 or 5, characterized in that the synchronously demodulated measurement signals are integrated, and in that the time which the integrated measurement signals take to reach a predetermined threshold value is measured.

8. The method as claimed in one of claims 2 to 7, characterized in that the modulation signal is at a frequency of 200 Hz.

9. The method as claimed in one of the preceding claims, characterized in that the rotation rate signal is read from the output of the rotation rate sensor,

and is compared with a rotation rate signal which is supplied to output stages.

10. The method as claimed in one of the preceding claims, characterized in that a system which is connected to the output sends back the rotation rate signal to its input for checking.

11. The method as claimed in one of the preceding claims, characterized in that the digital and analog components are continuously checked by checking components, and in that monitoring components monitor the checking components at least once during one operating cycle.